



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,467	06/14/2006	Thomas Netsch	PHIDE030426US	6961
38107 7590 09/28/2010 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P. O. Box 3001 BRIARCLIFF MANOR, NY 10510				
EXAMINER				
LL RUIPING				
ART UNIT		PAPER NUMBER		
2624				
MAIL DATE		DELIVERY MODE		
09/28/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/596,467

Applicant(s)

NETSCH ET AL.

Examiner

RUIPING LI

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4 and 6-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4 and 6-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 January 2010 and 09 June 2010 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. In view of the Appeal Brief filed on 07/23/2010, PROSECUTION IS HEREBY REOPENED. A New Ground of Rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

***.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1, 4, and 6-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for **failing to particularly point out and distinctly claim** the subject matter which applicant regards as the invention.

As to claim 1, the claim recites: "calculating a combined two-dimensional representation by imaging the two or more image data records according to the previously defined imaging specification onto the common display plane wherein a projection of the image information of the data records that is contained in the object volume is calculated during the calculation of the two-dimensional representation" in lines 13-17. However, there is insufficient antecedent basis for "the common display plane" in the claim. For prior art comparison, "the common display plane" is read as "a common display plane".

As to claim 4, the claim recites: "wherein in order to calculate the two-dimensional representation Cartesian coordinates within the display plane are assigned to non-Cartesian surface coordinates of the object volume" in lines. However, there is insufficient antecedent basis for "the two-dimensional representation Cartesian coordinates" in the claims. Moreover, it is not clear whether said "the display plane" refers to "two-dimensional display plane" or "common display plane". It is not clear what the "subject" is in the claim. There is a grammatical error in the claim. For prior art comparison, "wherein in order to calculate the two-dimensional representation Cartesian coordinates within the display plane are assigned to non-Cartesian surface coordinates

of the object volume" is read as "wherein in order to calculate a two-dimensional representation, Cartesian coordinates within a display plane are assigned to non-Cartesian surface coordinates of the object volume" . Appropriate amendment is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Front et al (**USPGPub 2001/0041835 A1**, hereinafter "Front") in view of Etienne et al ("**Soap-bubble visualization and quantitative analysis of 3D coronary magnetic resonance angiograms**", MR in Medicine, 2002, "Etienne"). Etienne is cited by applicant in IDS filed on 06/14/2006.

As to claim 1, Front discloses a method for the computer-assisted visualization of a three-dimensional anatomical object (**the method for guiding a diagnosis or therapeutic instrument towards a target region inside the patient's body, see [0001]**), comprising the following method steps:

recording two or more diagnostic image data records of the object wherein at least one image data record comprises morphological image information of the anatomical object and at least one further image data record comprising functional image information relating the anatomical object (**registering a high-resolution structural image and a low-resolution functional image of a portion of the patient's body, in order to obtain a combined image, see [0008], [0004] and [0014]**); and calculating a combined two-dimensional representation by imaging the two or more image data records according to a previously defined imaging specification onto a common display plane (**registering the 2D structural image fig.2B with the 2D functional image fig.2A, and thus obtaining a combined image fig.2C; the combined image is displayed in a video terminal, see [0027], [0049], and [0051]**).

Front does not expressively disclose transforming a curved subvolume data in 3D into multiple segments in a 2D and displaying the 2D image in a plane with normal vector N. **However**, Etienne does explicitly teach: defining an imaging specification for imaging the image data onto a two-dimensional display plane, the definition of the imaging specification involving the identification of anatomical features of the object in at least one of the image data records and the determination of an object volume delimited by a curved surface in which the anatomical features of the object are contained; and calculating a combined two-dimensional representation by imaging the two or more image data records according to the previously defined imaging specification onto a common display plane wherein a projection of the image information of the data records

that is contained in the object volume is calculated during the calculation of the two-dimensional representation (see fig.2 in page 659, para.1 lines 9-14, in the right col. of page 658, and para.1 in the right col of page 659; the plane with normal vector **N** is a common display plane).

It would have been obvious to person skilled in the art at the time of the invention to combine the teaching of Front and the teaching of Etienne in order to monitor the real time changes taking place due to a disease and guiding the instrument toward the target region (**Front**, [0008] and [0009]).

As to claim 4, the combination of Front and Etienne discloses, wherein in order to calculate the two-dimensional representation, Cartesian coordinates within the display plane are assigned to non-Cartesian surface coordinates of the object volume (**Front**, transforming the coordinates of the trajectory in the coordinate system of the combined image into the coordinate system of steretactic guide, see [0052]). It would have been obvious to person skilled in the art to know that the coordinate system of steretactic guide may be a polar system which is a non-Cartesian system.

As to claim 6, the combination of Front and Etienne discloses the method as claimed in claim 1, wherein the functional image information is obtained by evaluating temporal sequences of morphological image data of the anatomical object (**Front**, (1)

taking a series of structural images for a target portion of the patient's body with the high-resolution in a certain period of time, (2) taking a functional image for the target portion with low-resolution after injecting a suitable radiopharmaceutical into the patient, and then (3) registering the function image with the structural image and providing the combined image that shows where the cancerous area are located on the high-resolution morphologic image, see [0020] lines 5-26, and [0023]-[0029], which means that the functional image information, i.e., cancerous area, is obtained by evaluating temporal sequences of morphological image data).

As to claim 7, the combination of Front and Etienne discloses the method as claimed in claim 1, wherein at least one of the image data records comprises at least one slice image of the anatomical object (**Front, taking a series of structural images for a target portion of the patient's body with the high-resolution in a certain period of time**, see [0020] lines 5-26).

As to claim 8, the combination of Front and Etienne discloses the method as claimed in claim 1, wherein the image data records are recorded by means of computer tomography, magnetic resonance or ultrasound (**Front, CT, MRI, SPECT, PET image**, see [0003] lines 8-19).

As to claim 9, the combination of Front and Etienne discloses the method as claimed in claim 1, wherein the image data records are recorded using different imaging modes (**Front, CT, MRI, SPECT, PET image, see [0003] lines 8-19**).

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RUIPING LI whose telephone number is (571)270-3376. The examiner can normally be reached on 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on 571-272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/596,467
Art Unit: 2624

Page 9

/RUIPING LI/
Examiner, Art Unit 2624

9/12/2010

/Samir A. Ahmed/
Supervisory Patent Examiner, Art Unit 2624